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ENVIRONMENT

Ramon C. Mendoza
Remedial Project Manager
USEPA Region 5
77 West Jackson Boulevard
Mail Code: SE-5J
Chicago, IL 60604-3507

Subject:
Former Plainwell Impoundment and Plainwell No. 2 Dam Area 2012 Bank Conditions Monitoring Report - Addendum 1

Date:
January 25, 2013

Contact:
Michael J. Erickson, P.E.

Phone:
810.225.1924

Email:
michael.erickson@arcadis-us.com

Our ref:
B0064530.0004.00907

Dear Mr. Mendoza:

On behalf of Georgia-Pacific LLC (Georgia-Pacific), please find enclosed *Addendum 1 to the Former Plainwell Impoundment and Plainwell No. 2 Dam Area 2012 Bank Conditions Monitoring Report: Bank Maintenance Completion Memorandum for Plainwell Impoundment Western Channel, Removal Areas 4A and 6B; and Plainwell No. 2 Dam Removal Area 3A* submitted for U.S. Environmental Protection Agency (USEPA) approval.

If you have any questions, please do not hesitate to contact me.

Sincerely,

ARCADIS

Michael J. Erickson, P.E.
Vice President

Enclosures:
1 Hard Copy

Copies:

Judith Alfano, MDEQ (electronic copy)
Samuel Borries, USEPA (electronic copy)
Paul Bucholtz, MDEQ (electronic copy)
Todd Goeks, NOAA (electronic copy)
Garry T. Griffith, Georgia-Pacific, LLC (electronic copy)
Sharon Hanshue, MDNR (electronic copy)
Mark Mills, MDNR (electronic copy)
Lisa Williams, USFWS (electronic copy)
Julie Sims, NOAA (electronic copy)
Jessica Winter, NOAA (electronic copy)

ARCADIS
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Tel 810 229 8594
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MEMO

To:
Ramon Mendoza, USEPA

Copies:
Judy Alfano, MDEQ
Sam Borries, USEPA
Paul Bucholtz, MDEQ
Todd Goeks, NOAA
Garry Griffith, Georgia-Pacific
Sharon Hanshue, MDNR
Mark Mills, MDNR
Julie Sims, NOAA
Lisa Williams, USFWS
Jessica Winter, NOAA

From:
Michael J. Erickson, PE, ARCADIS

Date:
January 25, 2013

ARCADIS Project No.:
B0064530.0004.00907

Subject:

Addendum 1 to the Former Plainwell Impoundment and Plainwell No. 2 Dam Area 2012 Bank Conditions Monitoring Report: Bank Maintenance Completion Memorandum for Plainwell Impoundment Western Channel, Removal Areas 4A and 6B; and Plainwell No. 2 Dam Removal Area 3A

On behalf of Georgia-Pacific LLC this document is being submitted as an addendum to the Former Plainwell Impoundment and Plainwell No. 2 Dam Area 2012 Bank Conditions Monitoring Report (2012 BCMR; ARCADIS 2012a) submitted to United States Environmental Protection Agency (USEPA), Michigan Department of Natural Resources (MDNR), Michigan Department of Environmental Quality (MDEQ), National Oceanic and Atmospheric Administration (NOAA), and United States Fish and Wildlife Service (USFWS) on December 31, 2012. This addendum documents the completion of bank maintenance performed in former Plainwell Impoundment (Figure 1) Western Channel and Removal Areas 4A and 6B, and in Plainwell No. 2 Dam Area (Figure 2) Removal Area 3A as described in Section 6.2 of the 2012 BCMR. A detailed description maintenance design is included in the November 15, 2012 Technical Memorandum (ARCADIS 2012b). USEPA approved the maintenance in a letter dated November 20, 2012 (USEPA 2012a). Bank maintenance was performed from December 11, 2012 through January 8, 2013 under the oversight of USEPA and MDNR. Photographs of bank maintenance are included in Attachment 1.

Description of Bank Maintenance

Bank maintenance implemented in all areas included placement of rock. Two types of rock were placed:

- Angular rip rap - 8-inch mean diameter/18-inch maximum diameter
- Rounded river run rock - 6-inch mean diameter/9-inch maximum diameter

The angular rip rap was clean material from a virgin source obtained from Carr Brothers and Sons Excavating and Gravel in Albion, MI.

The rounded stone was from a stockpile of rock remaining at the conclusion of Former Plainwell Impoundment Time-Critical Removal Action (TCRA) construction activities in 2009. The 2012 bank maintenance utilized all of the rock present in that stockpile.

Former Plainwell Impoundment Western Channel

During the week of December 17, 2012, approximately 15 cubic yard (cy) of angular rip rap was installed in an approximately 50 linear feet (ft) and 10 vertical ft area of exposed geotextile fabric on the south bank of the Western Channel downstream of the former Plainwell Dam (Figure 3). Rock was placed using a long-reach excavator situated at the top of bank. ARCADIS verified completion of rock placement by visual observation that geotextile fabric was no longer exposed. The bank slope was not altered by the maintenance.

Former Plainwell Impoundment Removal Area 4A

During the week of December 11, 2012 approximately 75 cy of imported sand fill and 150 cy of angular rip rap was installed along approximately 700 linear ft of bank in Removal Area 4A (Figure 4; River Station 52+50 to 60+00). As described in the November 15, 2012 Technical Memorandum (ARCADIS 2012b), a non-woven geotextile fabric was installed prior to rock placement to protect against erosion behind the rock. The clean fill was installed to isolate exposed residuals in the bank soil from the Kalamazoo River, and the rock was installed to prevent future erosion. Rock was placed from the toe of slope to the prism-out 2-year storm water elevation (discharge of 3,845 cubic feet per second [cfs]). As described in the 2012 BCMR (ARCADIS 2012a), clean fill was not required between River Station 52+50 and 55+00; this area only received geotextile fabric and rock.

Upstream of River Station 55+00, a self-launching rock toe was placed in the channel to isolate the maintenance area from the flow of the river. Imported fill was placed behind the self-launching rock toe at a stable slope. Geotextile fabric was installed on the clean fill, and the self-launching rock toe was laid back on the newly formed bank. It should be noted that the bank was not re-built to its former post-

construction dimensions; the existing bank was stabilized by the newly installed rock and fill. Rock and fill were placed using a long-reach excavator situated at the top of bank.

Areas disturbed by construction activities were revegetated with Zone 3 Upland Seed Mix on January 2, 2013. Following seeding, exposed portions of the bank were covered with straw mulch to further protect the bank until vegetation becomes established.

Former Plainwell Impoundment Removal Area 6B

During the week of December 17, 2012 approximately 300 cy of rock was installed along approximately 500 linear ft of bank in Removal Area 6B (Figure 5; River Stations 43+50 to 48+00). As described in the November 15, 2012 Technical Memorandum (ARCADIS 2012b), a non-woven geotextile fabric was installed prior to rock placement to protect against erosion behind the rock. Rock armoring was installed from the toe of slope to the top of bank, which provides hard armor to about the prism-out 2-year storm water elevation (discharge of 3,845 cfs). Rock was placed using a long-reach excavator situated at the top of bank. The rock was a mixture of angular rip rap (75 cy) and rounded river run rock (225 cy).

Areas disturbed by construction activities were revegetated with Zone 3 Upland Seed Mix on January 2, 2013. Following seeding, exposed portions of the bank were covered with straw mulch to further protect the bank until vegetation becomes established. Willow trees growing in the area were cut to a height of no less than 2 ft so that equipment situated at the top of bank could reach over existing vegetation to access the slope for maintenance. Willow trees left at this height are expected to re-sprout.

On January 8, 2013, 190 live willow stakes were installed above the prism-out 2-year storm water elevation to support bank stability as woody roots develop and to increase the habitat quality of the floodplain by providing woody habitat. Live staking and incorporation of root wads in the bank is a common practice used to enhance habitat quality and increase bank stability (Fischenich 2001). Live stakes were harvested 3 days before installation while dormant and are expected to remain dormant until spring.

Plainwell No. 2 Dam Area Removal Area 3A

During the week of December 24, 2012, approximately 105 cy of angular rip rap was installed along approximately 150 ft of bank in Removal Area 3A (Figure 6; River Stations 208+50 to 210+00). As described in the November 15, 2012 Technical Memorandum (ARCADIS 2012b), a non-woven geotextile fabric was installed prior to rock placement to protect against erosion behind the rock. Rock armoring was installed from the toe of slope to the median water elevation (discharge of 950 cfs). Rock was placed using a long-reach excavator situated at the top of bank.

In addition, on January 3, 2013 coir log was installed at the interface of the top of the rock at the median water elevation. The coir log will provide additional energy dissipation and erosion protection at the

waterline until bank vegetation becomes established to provide long-term bank stability. The coir log is 12 inches in diameter and was secured with stakes and twine lashing as necessary to adequately secure the coir log.

Vegetated areas landward of the maintenance area disturbed by construction activities were seeded with Floodplain Forest Seed Mix on January 3, 2013. Following seeding, exposed portions of the bank were covered with straw mulch to further protect the disturbed portions of the bank until vegetation becomes established. Previously planted trees and shrubs remain in Removal Area 3A as a part of the Plainwell No. 2 Dam Area TCRA, and the bank is currently well-vegetated above the median water line.

Former Plainwell Impoundment Exposed Geotextile

Areas of exposed geotextile were identified in the November 20 (USEPA 2012a) and December 7 (USEPA 2012b) USEPA correspondences. USEPA identified areas of exposed geotextile in Removal Areas 3A, 4B, 9A, 10B and the Western Channel (described above). During the week of December 24, angular rip rap was hand placed in these areas during bank maintenance in the former Plainwell Impoundment.

Conclusion

Bank maintenance described in Section 6.2 of the 2012 BCMR (ARCADIS 2012a) and the November 15, 2012 Technical Memorandum (ARCADIS 2012b) was completed between December 11, 2012 and January 8, 2013 in a manner consistent with the approved bank maintenance design (ARCADIS 2012b and USEPA 2012a). All of the agreed upon and approved maintenance has been completed.

Attachments

Figure 1 Former Plainwell Impoundment Site Location Map
Figure 2 Plainwell No. 2 Dam Area Site Location Map
Figure 3 Former Plainwell Impoundment Western Channel Bank Maintenance Plan View and Cross-Section
Figure 4 Former Plainwell Impoundment Removal Area 4A Bank Maintenance Plan View and Cross-Section
Figure 5 Former Plainwell Impoundment Removal Area 6B Bank Maintenance Plan View and Cross-Section
Figure 6 Plainwell No. 2 Dam Removal Area 3A Bank Maintenance Plan View and Cross-Section

Attachment 1 Photographic Log

References

ARCADIS. 2012a. Former Plainwell Impoundment and Plainwell No. 2 Dam Area 2012 Bank Conditions Monitoring Report. December 31.

ARCADIS. 2012b. Former Plainwell Impoundment and Plainwell No. 2 Dam Area Fall 2012 Bank Repair Plan Technical Memorandum – Revised November 2012. November 15.

Fischenich, C. 2001. Stability Thresholds for Stream Restoration Materials, EMRRP Technical Notes Collection (ERDC TNEMRRP- SR-29), U.S. Army Engineer Research and Development Center, Vicksburg, MS.

USEPA. 2012a. Former Plainwell Impoundment and Plainwell No. 2 Dam Area Fall 2012 Bank Repair Plan Technical Memorandum – Revised November 2012. November 20.

USEPA. 2012b. Field Inspection Former Plainwell Impoundment, December 3, 2012. December 7, 2012.

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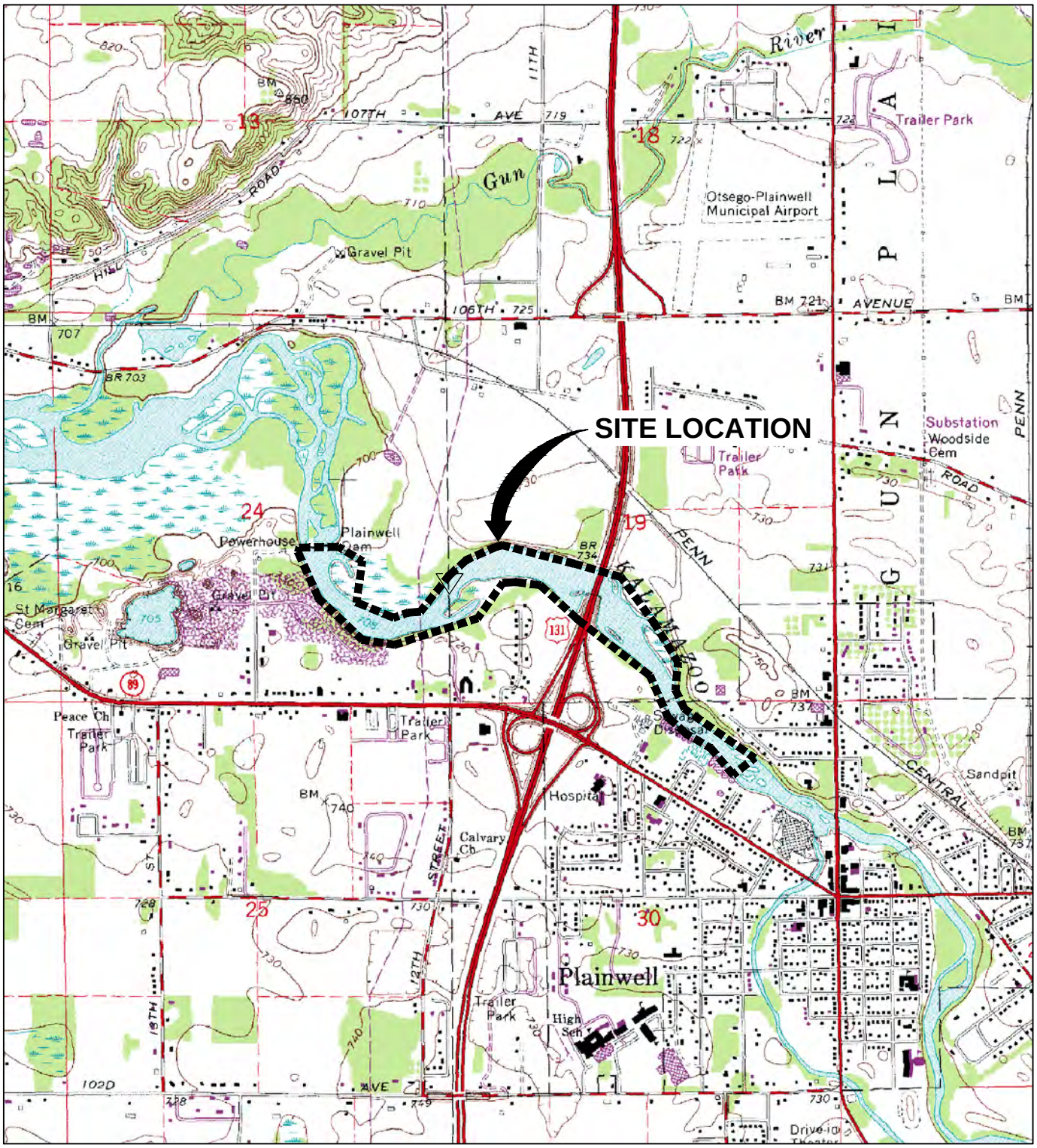
Figures



REFERENCE: USGS QUADS., 7.5 MIN. SERIES, DRG TOPOGRAPHIC MAP - ALLEGAN COUNTY, KALAMAZOO MICHIGAN.

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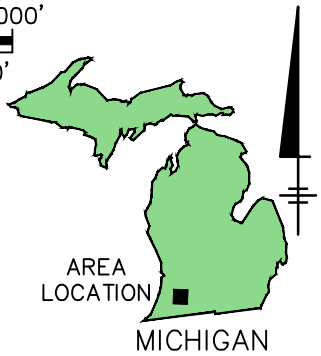
Approximate Scale: 1" = 2000'



GEORGIA-PACIFIC LLC
ALLIED PAPER, INC./PORTAGE CREEK/
KALAMAZOO RIVER SUPERFUND SITE

ADDENDUM 1 TO THE FORMER PLAINWELL IMPOUNDMENT AND PLAINWELL NO. 2 DAM AREA 2012 BANK CONDITIONS MONITORING REPORT: BANK MAINTENANCE COMPLETION MEMORANDUM FOR PLAINWELL IMPOUNDMENT WESTERN CHANNEL, REMOVAL AREAS 4A AND 6B; AND PLAINWELL NO. 2 DAM REMOVAL AREA 3A

FORMER PLAINWELL IMPOUNDMENT SITE LOCATION MAP

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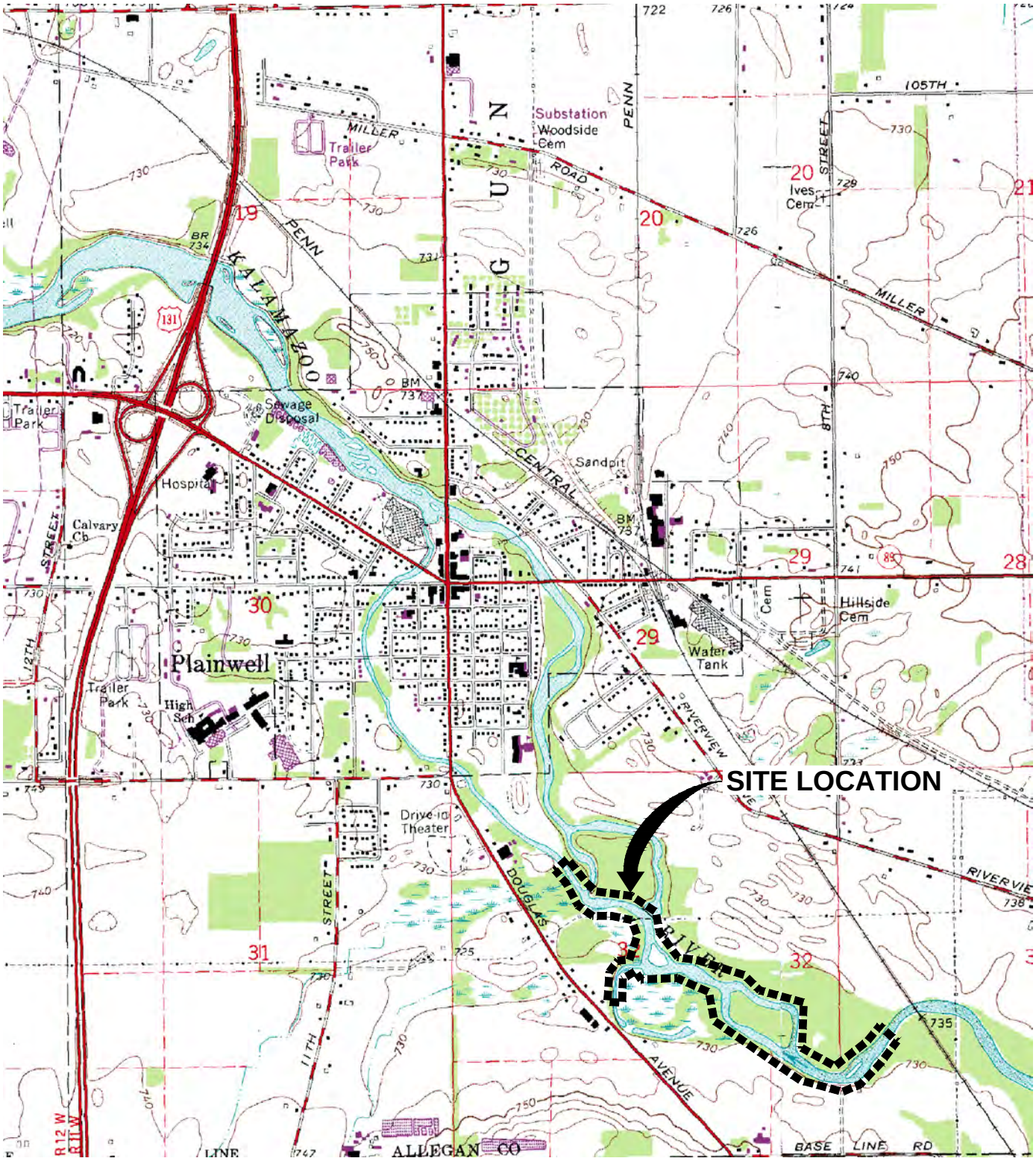
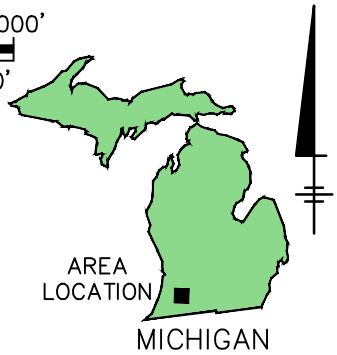
FIGURE 1



REFERENCE: USGS QUADS., 7.5 MIN. SERIES, DRG TOPOGRAPHIC MAP - ALLEGAN COUNTY, KALAMAZOO MICHIGAN.

0 2000' 4000'

Approximate Scale: 1" = 2000'



GEORGIA-PACIFIC LLC
ALLIED PAPER, INC./PORTAGE CREEK/
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PLAINWELL NO. 2 DAM AREA SITE LOCATION MAP

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FIGURE 2

CITY:SYRACUSE DIV/GROUP:ENV/CAD DB: A. SAMIOS PMS. GARBACIAK LYR: ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\06453\00040090\7\DWG\AB-BANK RPR64536N01.DWG LAYOUT: 2 SAVED: 1/24/2013 10:28 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 1/24/2013 10:28 AM BY: SAMIOS, ALEX
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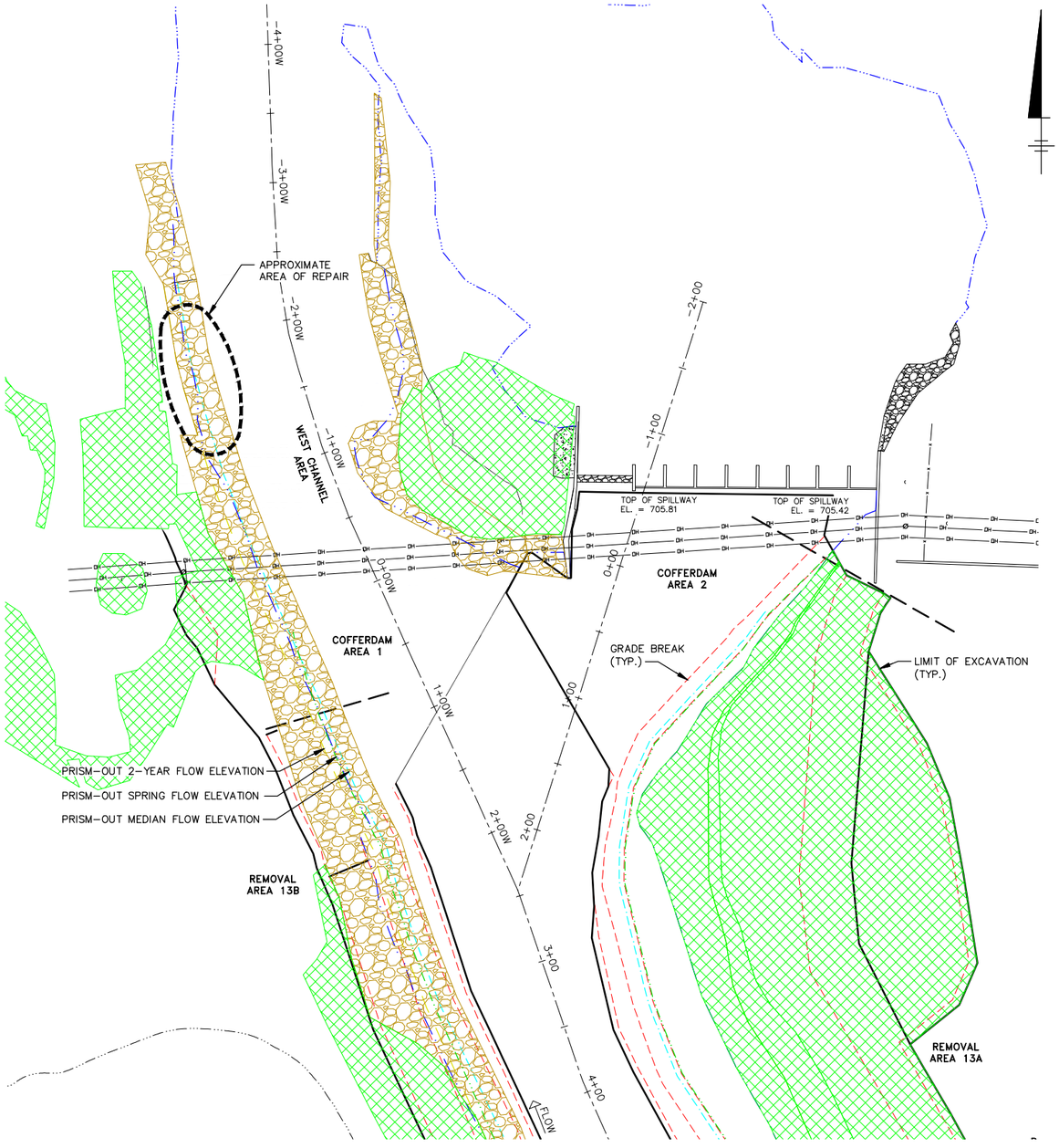


PLAN VIEW

0 50' 100'

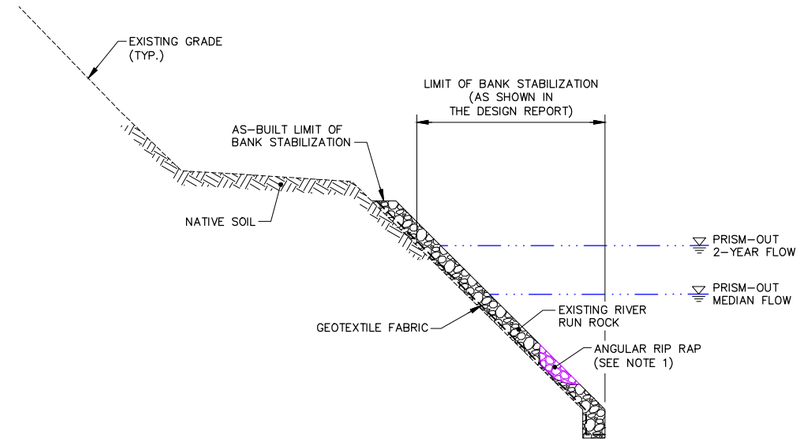
GRAPHIC SCALE

LEGEND:

- −1+00W — STATION POINT (IN HUNDREDS OF FEET)
- —— + —— KALAMAZOO RIVER CENTERLINE AND STATION LINE
- PRE-CONSTRUCTION WATER LINE
- APPROX. LIMIT OF REMOVAL AREA
- EXISTING VEGETATION
- EXISTING RIVER RUN ROCK

BASEMAP NOTES:

1. BASEMAP TOPOGRAPHY WITHIN "APPROXIMATE LIMIT OF FIELD SURVEY" IS BASED ON FIELD SURVEY POINT DATA OBTAINED BY BBL IN SEPTEMBER 2003, AND PREIN & NEWHOF IN JULY, AUGUST, AND SEPTEMBER 2006. VERTICAL DATUM FOR ALL FIELD SURVEYS AND BENCHMARKS IS NGVD 29. LIMITS OF INDIVIDUAL FIELD SURVEYS ARE NOT SHOWN FOR CLARITY. SOME INTERPOLATION MAY EXIST BETWEEN INDIVIDUAL FIELD SURVEYS. BASEMAP TOPOGRAPHY OUTSIDE "APPROXIMATE LIMIT OF FIELD SURVEY" IS BASED ON CONTOUR INFORMATION OBTAINED FROM THE ALLEGAN COUNTY GIS DATABASE, DATED APRIL 2004. VERTICAL DATUM FOR AERIAL BASEMAP TOPOGRAPHY IS NAVD 88. CONVERSION BETWEEN VERTICAL DATUMS WITHIN VICINITY OF PROJECT SITE IS AS FOLLOWS: [NAVD 88] + 0.44 FT = [NGVD 29]. ALL ELEVATIONS SHOWN ARE IN FEET. HORIZONTAL DATUM FOR ALL SURVEY INFORMATION (I.E., FIELD AND AERIAL) IS STATE PLANE, NAD 83, MICHIGAN SOUTH ZONE (2113), INTERNATIONAL FEET.
2. FLOW LIMITS SHOWN ON THIS DRAWING ARE BASED ON MODELING AS DESCRIBED IN SECTION 2.7 OF THE DESIGN REPORT. ACTUAL FLOW LIMITS VARIED THROUGHOUT WORK ACTIVITIES.



NOTE:

1. ANGULAR RIP RAP WAS 8-INCH MEAN DIAMETER ANGULAR STONE WITH A MAXIMUM DIAMETER OF 18-INCHES.

TYPICAL BANK SECTION

NOT TO SCALE
(3X VERTICAL EXAGGERATION)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_____BY_____

GEORGIA-PACIFIC LLC
ALLIED PAPER INC./PORTAGE CREEK/
KALAMAZOO RIVER SUPERFUND SITE

ADDENDUM 1 TO THE FORMER PLAINWELL IMPOUNDMENT AND PLAINWELL NO. 2 DAM AREA 2012 BANK CONDITIONS MONITORING REPORT: BANK MAINTENANCE COMPLETION MEMORANDUM FOR PLAINWELL IMPOUNDMENT WESTERN CHANNEL, REMOVAL AREAS 4A AND 6B; AND PLAINWELL NO. 2 DAM REMOVAL AREA 3A

FORMER PLAINWELL IMPOUNDMENT WESTERN CHANNEL BANK MAINTENANCE PLAN VIEW AND CROSS-SECTION

ARCADIS

FIGURE 3

CITY: SYRACUSE, NY DIV/GROUP: ENVCAD DB: A. SAMIOS LD: A. SAMIOS PM: P. MCGUIRE LYR:ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\00645300\00400907\DWG\AB-BANK RPR\645300G03.dwg LAYOUT: 3 SAVED: 1/25/2013 12:47 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 1/25/2013 12:48 PM BY: SAMIOS, ALEX
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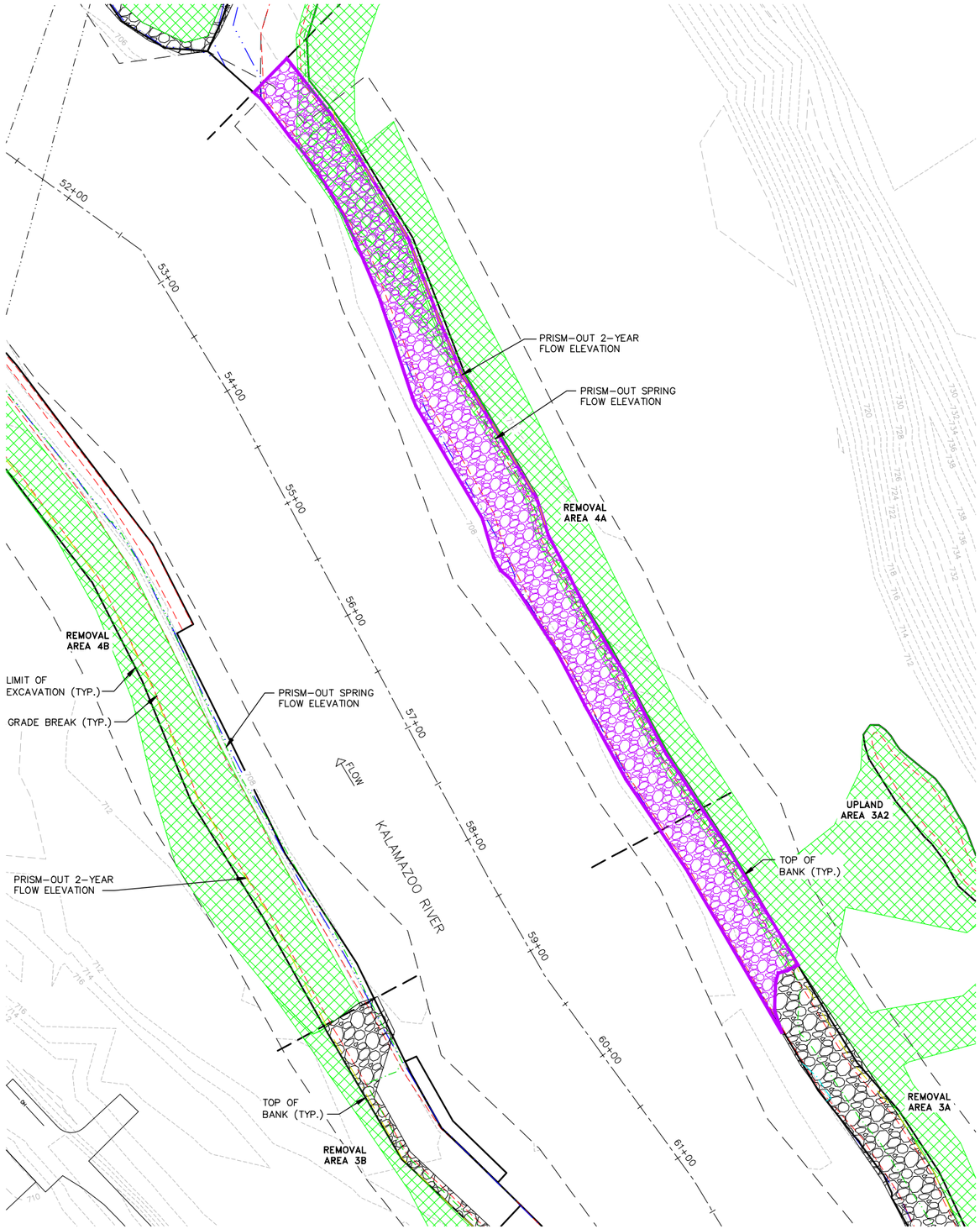

PLAN VIEW

0 50' 100'

GRAPHIC SCALE

LEGEND:

- 60+00 — STATION POINT (IN HUNDREDS OF FEET)
- KALAMAZOO RIVER CENTERLINE AND STATION LINE
- 710 — ELEVATION CONTOUR
- APPROX. LIMIT OF FIELD SURVEY
- APPROX. LIMIT OF REMOVAL AREA
- PRE–CONSTRUCTION WATER LINE
- EXISTING VEGETATION
- EXISTING RIVER RUN ROCK
- 2012 ROCK PLACEMENT

BASEMAP NOTES:

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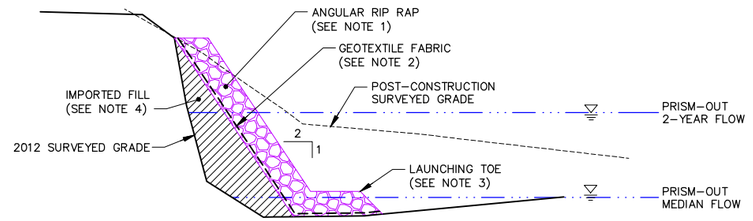
2. FLOW LIMITS SHOWN ON THIS DRAWING ARE BASED ON MODELING AS DESCRIBED IN SECTION 2.7 OF THE DESIGN REPORT. ACTUAL FLOW LIMITS VARIED THROUGHOUT WORK ACTIVITIES.

FLOW ELEVATION TABLE

STATION	PRISM–OUT MED	PRISM–OUT 2–YEAR
52+00	708.6	710.9
53+00	708.8	711.0
54+00	708.9	711.1
55+00	709.0	711.2
56+00	709.1	711.3
57+00	709.2	711.4
58+00	709.4	711.6
59+00	709.5	711.7
60+00	709.7	711.8



NOTES:

1. ANGULAR RIP RAP WAS 8–INCH MEAN DIAMETER ANGULAR STONE WITH A MAXIMUM DIAMETER OF 18–INCHES.
2. GEOTEXTILE WAS MIRAFI FILTERWEAVE 700, OR EQUIVALENT.
3. LAUNCHING TOE WAS CONSTRUCTED TO ISOLATE THE FILL PLACEMENT AREA FROM THE FLOW OF THE RIVER. DIMENSIONS WERE DETERMINED IN THE FIELD BASED ON OBSERVED FIELD CONDITIONS.
4. IMPORTED FILL WAS FROM A VIRGIN, UNCONTAINED SOURCE AND WAS PLACED TO THE REQUIRED THICKNESS TO CREATE A STABLE BANK SLOPE BETWEEN RIVER STATIONS 55+00 AND 60+00. IMPORTED FILL WAS NOT REQUIRED TO CREATE A STABLE SLOPE DOWNSTREAM OF RIVER STATION 55+00. ROCK WAS PLACED ON EXISTING BANK.

TYPICAL BANK SECTION

NOT TO SCALE
(3X VERTICAL EXAGGERATION)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_____BY_____

GEORGIA-PACIFIC LLC
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FORMER PLAINWELL IMPOUNDMENT REMOVAL AREA 4A BANK MAINTENANCE PLAN VIEW AND CROSS-SECTION

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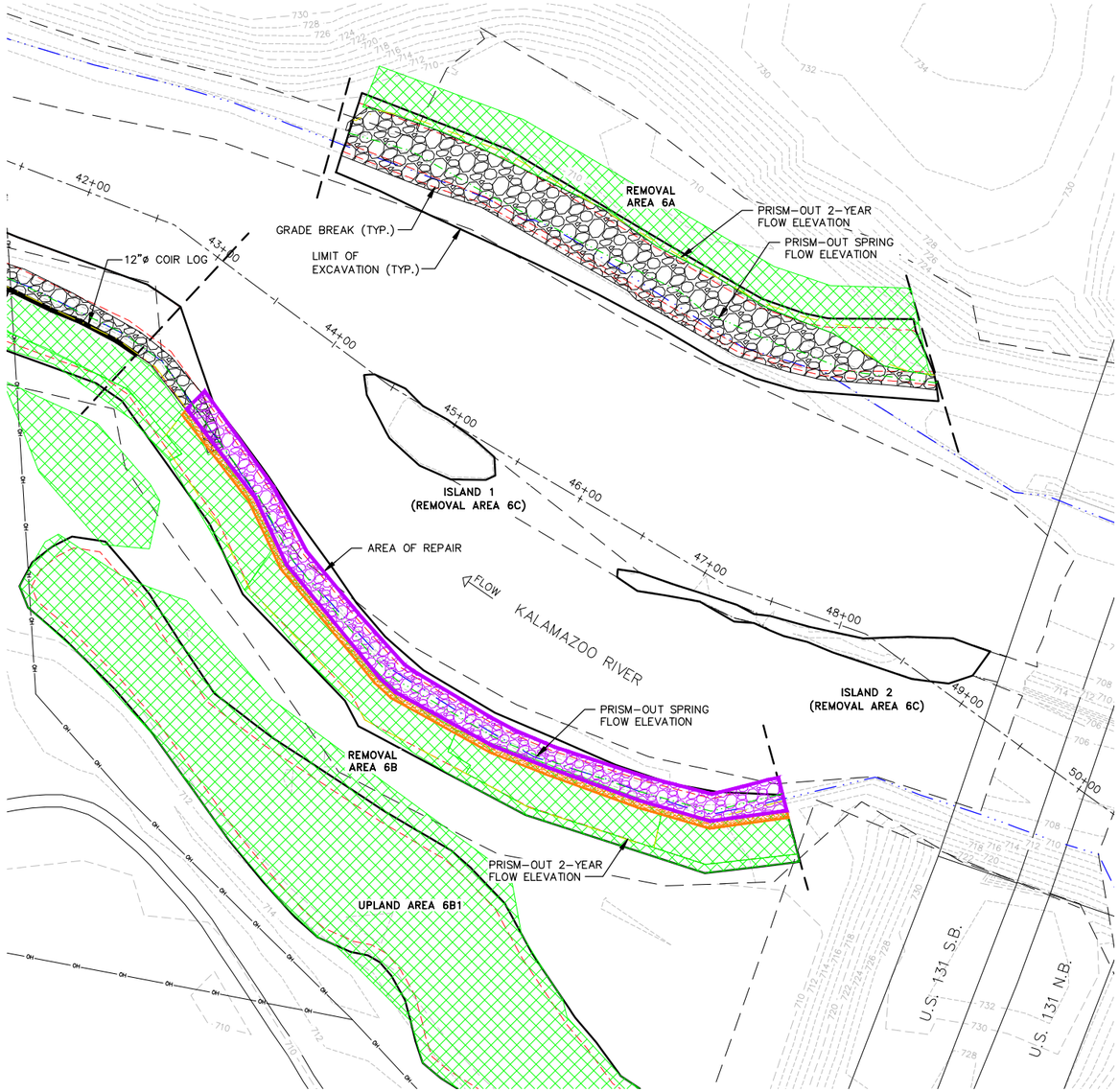
FIGURE 4



PLAN VIEW

0 50' 100'

GRAPHIC SCALE

LEGEND:

- 60+00 — STATION POINT (IN HUNDREDS OF FEET)
- KALAMAZOO RIVER CENTERLINE AND STATION LINE
- 710 — ELEVATION CONTOUR
- APPROX. LIMIT OF FIELD SURVEY
- APPROX. LIMIT OF REMOVAL AREA
- PRE-CONSTRUCTION WATER LINE
- EXISTING VEGETATION
- EXISTING RIVER RUN ROCK
- 2012 ROCK PLACEMENT
- LIVE WILLOW STAKES

FLOW ELEVATION TABLE

STATION	PRISM-OUT MED	PRISM-OUT 2-YEAR
43+00	705.7	708.8
44+00	706.0	709.0
45+00	706.1	709.1
46+00	706.2	709.1
47+00	706.4	709.2
48+00	706.7	709.3
49+00	707.3	709.3

BASEMAP NOTES:

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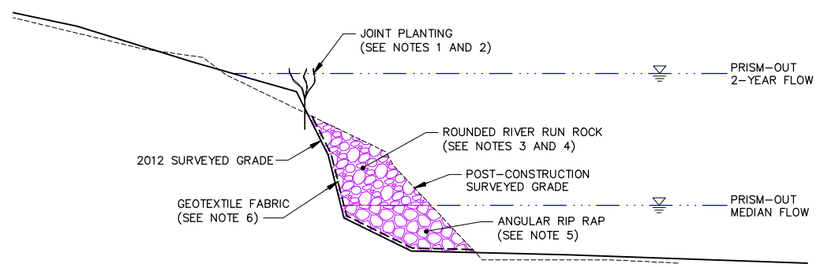

NOTES:

1. LIVE WILLOW STAKES WERE INSERTED INTO UNDERLYING SOIL IN TWO ROWS AT 5-FOOT SPACING ON-CENTER.
2. LIVE STAKES WERE DORMANT STEM CUTTINGS OF 1 TO 3 INCHES IN DIAMETER AT THE TOP AND AT LEAST 36 INCHES IN LENGTH. CUTTINGS WERE CLEAN ANGLED CUTS AT THE BOTTOM AND FLAT CUTS AT THE TOP, WITHOUT SPLIT ENDS, AND HAD AT LEAST TWO LIVE LATERAL BUDS ON THE PORTION OF THE STAKE THAT WAS ABOVE-GROUND.
3. AREA VISIBLE ABOVE THE WATER LINE WAS TOP-DRESSED WITH ROUNDED RIVER RUN ROCK TO THE EXTENT PRACTICAL BASED ON STOCKPILED QUANTITY.
4. ROUNDED RIVER RUN ROCK WAS 6-INCH MEAN DIAMETER ROUNDED STONE WITH A MAXIMUM DIAMETER OF 9 INCHES.
5. ANGULAR RIP RAP WAS 8-INCH MEAN DIAMETER ANGULAR STONE WITH A MAXIMUM DIAMETER OF 18-INCHES.
6. GEOTEXTILE WAS MIRAFI FILTERWEAVE 700, OR EQUIVALENT.

TYPICAL BANK SECTION

NOT TO SCALE
(3X VERTICAL EXAGGERATION)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_____BY_____

GEORGIA-PACIFIC LLC
ALLIED PAPER INC./PORTAGE CREEK/
KALAMAZOO RIVER SUPERFUND SITE

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FORMER PLAINWELL IMPOUNDMENT REMOVAL AREA 6B BANK MAINTENANCE PLAN VIEW AND CROSS-SECTION

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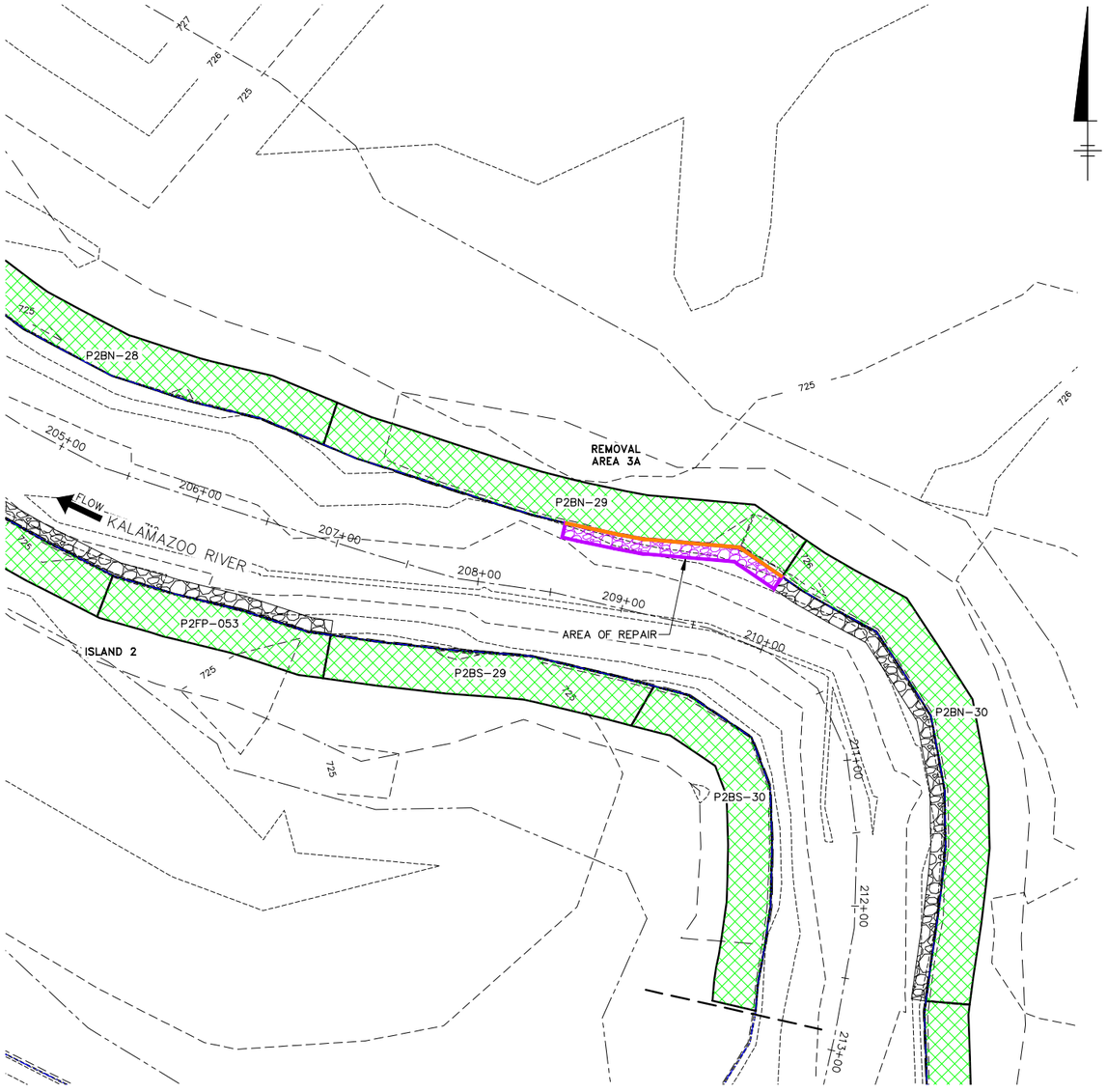
FIGURE 5



PLAN VIEW

0 50' 100'

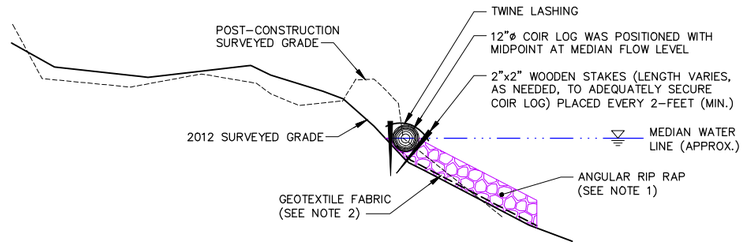
GRAPHIC SCALE

LEGEND:

- 209+00 — STATION POINT (IN HUNDREDS OF FEET)
- KALAMAZOO RIVER CENTERLINE AND STATION LINE
- 725 — ELEVATION CONTOUR
- APPROX. LIMIT OF FIELD SURVEY
- APPROX. LIMIT OF REMOVAL AREA
- APPROX. MEDIAN WATER LINE
- EXISTING VEGETATION
- EXISTING RIVER RUN ROCK
- 2012 ROCK PLACEMENT
- 2012 COIR LOG PLACEMENT

BASEMAP NOTES:

1. APPROXIMATE LIMITS OF FIELD–BASED SURVEY DELINEATES AREA WHERE TOPOGRAPHIC INFORMATION IS BASED ON SURVEY DATA COLLECTED DURING FIELD WORK IN 1993, 2000, 2007, AND 2008, WHICH INCLUDED SEDIMENT AND SOIL SAMPLE COLLECTION, TRANSECT SURVEYS, PROBING ACTIVITIES, AND DETAILED BANK SURVEY PERFORMED BY PREIN & NEWHOF APRIL THROUGH JUNE 2009. TOPOGRAPHIC INFORMATION OUTSIDE APPROXIMATE LIMITS OF FIELD–BASED SURVEY IS BASED ON AERIAL SURVEY INFORMATION PROVIDED BY AXIS GEOSPATIAL, LLC (JOB NUMBER: 8068NE, DATE FLOWN: DECEMBER 29, 2008, CONTOUR INTERVAL: 1 FOOT). HORIZONTAL DATUM FOR ALL SURVEY INFORMATION IS STATE PLANE, NAD 83, MICHIGAN SOUTH ZONE (2113), INTERNATIONAL FEET. VERTICAL DATUM IS U.S.G.S. NGVD 29. UNITS ARE U.S. SURVEY FEET.
2. APPROXIMATE MEDIAN WATER LINE BASED ON HYDRAULIC MODELING ANALYSIS. WATER LINE VARIED THROUGHOUT FIELD ACTIVITIES.



NOTES:

1. ANGULAR RIP RAP WAS 8–INCH MEAN DIAMETER ANGULAR STONE WITH A MAXIMUM DIAMETER OF 18–INCHES.
2. GEOTEXTILE WAS MIRAFI FILTERWEAVE 700, OR EQUIVALENT.

TYPICAL BANK SECTION

NOT TO SCALE
(3X VERTICAL EXAGGERATION)

RECORD DRAWINGS
TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND BELIEF, THESE RECORD DRAWINGS SUBSTANTIALLY REPRESENT THE PROJECT AS CONSTRUCTED.

DATE_____BY_____

GEORGIA-PACIFIC LLC
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PLAINWELL NO. 2 DAM
REMOVAL AREA 3A
BANK MAINTENANCE PLAN VIEW AND CROSS-SECTION

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FIGURE
6

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Attachment 1

Photographic Log

1

Placing geotextile on clean fill material in Former Plainwell Impoundment Removal Area 4A.

2

Installation of self-launching rock toe in Former Plainwell Impoundment Removal Area 4A.

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BANK MAINTENANCE PHOTO LOG

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1

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3

Placing clean fill behind self- launching rock toe in Former Plainwell Impoundment Removal Area 4A.

4

Installation of rock on bank in Former Plainwell Impoundment Removal Area 4A.

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BANK MAINTENANCE PHOTO LOG

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B0064530/0004/00907/CDR/64530P08.CDR

5

Installing rock at downstream end of Removal Area 4A in Former Plainwell Impoundment.

6

View looking west of completed bank maintenance in Former Plainwell Impoundment Removal Area 4A.

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BANK MAINTENANCE PHOTO LOG

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1

7

Installing rock in Removal Area 6B in Former Plainwell Impoundment.

8

Installing rock in Removal Area 6B in Former Plainwell Impoundment.

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B0064530/0004/00907/CDR/64530P10.CDR

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BANK MAINTENANCE PHOTO LOG

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1

9

View of completed bank maintenance in Removal Area 6B of the Former Plainwell Impoundment.

10

View of completed bank maintenance in Removal Area 6B of the Former Plainwell Impoundment.

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BANK MAINTENANCE PHOTO LOG

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11

Placing rock near the Western Channel of the Former Plainwell Impoundment.

12

Placing rock on the bank of Removal Area 3A in the Plainwell No. 2 Dam Area.

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BANK MAINTENANCE PHOTO LOG

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ATTACHMENT 1

13

View of completed bank maintenance in Plainwell No. 2 Dam Area Removal Area 3A.

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BANK MAINTENANCE PHOTO LOG

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1

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